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Intellect

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Image or to image?

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Abstract

The proliferation of images towards an iconic communication in the hypermediacy of social media, of locative media, of Internet of Things (IoT) on one side and the visualization of real-time data, the deep learning algorithm on the other, question the essence of how reality is perceived, created and the nature and role of images itself. The common understanding of what constitutes an image is related to the representation of things and people. In the context of instant messaging, social media and Big Data, distributed and networked IoT, this seems not to be the case anymore. IoT extends the idea of social media to embrace 'things' into the equation, to form something that the author defines as the 'Thingbook'. The Thingbook generates images of us from the perspective of things and data based on a heterogeneous system of technologies that sense, capture, analysis and learn about the world in real-time. Through this real-time dimension reality oscillates from a representational paradigm to a performative one and to certain extent towards a paradoxical condition. This article will collect evidence of how IoT hypermediacy on one side is increasingly changing communication from linguistic to iconic, and on the other side also how data visualization and Artificial Neural Networks are changing learning from text to images at the level of the Google Cat Algorithm at the level of the convergence of Facebook with the Thingbook. This will look into practices that make extensive use of the image in the immediacy of communication, into evidence of how information derived from sensors is recomposed into images, and, to a certain extent, how the discourse around image and IoT or Big Data questions our concept of image and reality.

Keywords

performativity

Internet of Things

hypermediacy

things

representation

reality

Prologue: Ontological puzzle

To be or not to be, that is the question. (Shakespeare, *Hamlet*)

These Shakespearian verses resonate in the title with a distinguished heritage within the western culture and thinking. They reflect the double essence of the word 'image', being a noun and a verb. The oscillation between those two states maps the oscillation between two visions of world and how the western thinking and science has developed its knowledge of it. In that sense the oscillation between the noun image and the verb to image reflects the oscillation between two ontologies: the representational one and a performative one.

A performative ontology is defined by Callon as something able to produce reality (2007), it is actively engaged in the construction of reality (2007) as opposed to representational.

Representationalism takes it for granted that the defining characteristic of science is its production of representations of nature, facts and theories; it studies, one can say, science-as-knowledge. (Pickering, 1994: 413)

This article, therefore, attempts to discuss the implication the ontological oscillation, what this means for the nature and role of images in our culture and how this is already present in emerging media practice or in the evolution of digital technology in areas like Internet of Things (IoT), big data and deep machine learning.

In the western culture the New Testament states the dominance of the language in the creation of the world.

‘In the beginning was the Word’ (John 1:1).

Whilst the ontological oscillation shifts the focus from the word to the image, in general it is still a matter of language being that of the pixel or of the data.

Media technologies are moving towards the ubiquitous paradigm and ubiquitous media are now dispersed and integrated into the physical environments. The vision of the IoT and the Big Data manifests and marks the shift of balance between the representational and the performative. In this view the performative becomes a more constituent way of knowing reality while making it.

While from a strictly technological point of view the IoT stands for a generic terminology that identifies a complex set of informational (social media, locative media), computational (big data, etc.) and communicational (wireless, mobile, etc.) systems, ultimately the IoT has come to mean the first real implementation of the ubiquitous paradigm. This cultural and social implementation of the ubiquitous paradigm concerns both human and non-human (things, plants, animals, etc.), and the encounter with the realm of pixel and data. The article will look for evidence in this media context to reveal the oscillation between the two ontological states and it will attempt to anticipate a possible paradoxical condition and suggest the definition of a theory object, the Thingbook.

In Sterling's word a theory object is a concept that's accreting attention, and generating visible, searchable, rankable, trackable trails of attention (2006). Similarly the Thingbook is introduced towards the end of the article to set the scene of visible evidences and to open up the debate.

Scene I: Locative media

It might have happened to some of us to spot a Google car or bike with the special orbital Google Street view camera, in the act of creating a 'digital mirror' of the real world. The level of accuracy that this endeavour represents can in some respects remind of the story about the map of the Empire depicted by Borges, where the map resulted as big as the Empire (1999). The outcome of that cartographic endeavour was far from the predicted perfection the cartographer aimed to achieve however the inhabitants of the Empire still found a use for map.

In the western Deserts, tattered Fragments of the Map are still to be found, Sheltering an occasional Beast or beggar; in the whole Nation, no other relic is left of the Discipline of Geography (Borges, 1999).

Through their ability to track, locate and collect data, the digital cartographic images are relics of data that create a memory, physically or virtually, attached to places, objects or bodies while they communicate, elaborate, interact on the digital side through complex visualization system they also create reality in real-time.

The images, locative media produce, are not only that of a digital morphology overlapped to the physical one but also the ones that includes the body, things, plants and animal on translated into data on the screen. Those mapping images oscillate between the

representation of the space and the performance of the body, in synchronous with the flow of life that they create and record.

Scene II: IoT

In the new emerging media context, the IoT is evolving as a conceptual framework for understanding how physical objects and environment are going to interwoven with the digital world of data. Once connected to a network, objects will inherit the capability to report on the world around them, on themselves and to communicate between them.

When we think of the kind of social networks (i.e. Facebook) that the Internet has grown so far, we think of that of human but until now objects, things, animals, plants and places have been absent from this public and private sphere of communications, discussions, sharing, etc.

However if indeed the IoT changes the way we cohabit physical space with Things, then what happen if it's not only humans contributing to the social network, but also our Things.

In his *A Manifesto for Networked Objects — Cohabiting with Pigeons, Arphids and Aibos in the Internet of Things* (Bleecker, 2006), Julian Bleecker, shows how objects become interconnected together and communicate with the people through what he defines as blogjects. Blogjects track and trace where they are and where they've been, they have self-contained (embedded) histories of their encounters and experiences and also they develop some form of agency with an assertive voice within the social web.

Things can upload, download, broadcast and stream meaningful and meaningful-making information, contribute to the understanding and making of reality. Significantly the information that is going to be shared is predominantly visual information.

The most known case of a blogject is the Pigeon that blog (Da Costa, 2004) which extended the ability to visually communicate to the animal realm, showing how the performative can be interlinked with the representational.

Scene III: Social media

Gizmodo, the popular site of tech news, in March 2016 estimated that the photo uploads on Facebook has reached a total 300 million per day. Instagram at the end of 2015 has archived over 18.7 billion photos from their user. Twitter and Snapshots have reached similar volumes of images shared.

Among the same category of social media we can enumerate also the instant messaging services like WeChat, What's up, Messenger.

The popular real-time and instant messaging platforms reveals practices of usage from daily users which are very creative in relation to the language and to some extent they can be considered performative: shortage of language (abbreviation and phonetics), emoticons and icons, where the visual element aims to convey in an immediate manner sentiment and feelings.

The emoticons and the evolution of that visual emotional language is becoming the common language, very immediate and effective, of online instant communication; new libraries of icons and animated images are made available so people can quickly communicate their feelings, agreement, surprise or disappointments. In China, where WeChat is one of the most popular app on phones, icons and images are the main means on communication.

This vocabulary of icons and animated images carries meanings and combined with syntax it can resemble the early stage of the development of a language.

Similarities can be drawn with the Chinese language. In fact in that far eastern culture differently the language developed essentially from a visual form and not from an alphabetical or phonetically one. Chinese characters are non linguistic, they are visual and their meaning is performed by the representational mean.

Scene IV: Big Data and visualization

The term big data comes to define complex set of digital information that can be stored, analysed, mined, visualized and shared. The nature of Big Data is of different kinds; it could be textual or visual. The characteristics that better express Big Data could be summarize as: their volume, the almost real-time sharing and the complex analytics and visualization. Whether on the physical side of the IoT, data shadows has become a common metaphor to explain how the digital data surround the material reality; a way for describing the enhancement of the physical world with information: connotations of significance, history, meaning, memory. The digital shadows become traces of our action, like a digital footprint; at the same time data shadow is also a new kind of interfaces mainly visual. Images and dynamic Interfaces are where data shadow reveals itself, allowing us to interact with. Visual information translated into data which in order to be communicated and understood are re-translated into images, moving images, maps and graphic information interfaces.

An example of what is meant by this oscillation is the Quorum project. Quorum is an algorithmic system developed by i-DAT.org.

Quorum proposes new analytical techniques, which focus on enhanced audience engagement through the use of Artificial Neural Networks (ANN), Self Organising Maps and Deep Learning Networks to innovatively integrate subjective and objective data, considering its temporal and predictive aspects, variety and quality and correlations. Through the feeds off data generated by material and virtual environments and the physical and social behaviour of audiences it decentralized decision-making processes to generate a dynamic and evolving collective behaviour; by interacting with the big data through visual interface we act upon reality and we affect it in its present state. This is the

oscillation that moves from the screen to reality, which shifts the representation into a performative state.

Once more the immediacy and performativity of the visual language of images, graphics and icons is the mean of a new fast effective and direct manipulation of data and ultimately of the real world, in a way that reshapes it.

Scene V: Big Data and Artificial Neural Network (ANN)

On the deepest side of the Big Data there are systems that analyse and learn about the world we inhabit from the unstructured data collected by social media or by sensing technologies connected to the Network. Interestingly it appears that images are at the core of these processes. Images are nowadays populating the Internet as much as text, and similarly they have gained relevance; the visual and the textual are getting an equivalent status as codified languages.

In 2012 Google X Lab's 16,000 processor deep learning algorithm autonomously identified cat faces (with a 74.8 per cent accuracy) from ten million randomly selected YouTube video thumbnails. The process collapses the distinction between these animals and algorithmic processes, and whilst it is unclear if cats can recognize ANN, ANN can certainly understand the concept of a cat. This somehow brings the discussion back to the initial question about image and to image, about an image that represents an object and the algorithm that images a cat.

The GCFN challenges not only the relationship between data and things, it challenges the nature of an image in a digital context and also creates a shift in the hierarchical balance between the visual over the textual. In a sense the algorithmic system doesn't know what

is a cat at the level of its representation, it has to perform and learn at a subatomic level of data to recognize it.

This is a dance between the representational level and the performative one, oscillating between the image as an object of representation and the image as the set of data to imaging the cat.

Epilogue or denouement: Thingbook, a matter of cats!

‘Science and technology multiply around us. To an increasing extent they dictate the languages in which we speak and think. Either we use those languages, or we remain mute’ (Ballard, [1974] 2010).

This last part of the article focuses on a practical, design perspective of interest for these new technological contexts. To do so it introduces a design and media concept, which is both theoretical and practical in its intentions by defining a new theory object.

The theory object is called the Thingbook, for its assonance to the Facebook, here used as a synecdoche of the Internet, the Network of the people.

Thingbook as a concept has been already discussed in a previous paper ‘Thingbook: The society of all things (humans, animals, things and data)’ (Corino and Phillips, 2016) by the authors as a way to ignite and shape the discussion towards a speculative and experimental space. Following a brief summary of how the previous paper frames the Thingbook:

Thingbook is both taxonomy of things, an algorithm for their form and behaviour, which in turn is a generative meshwork of relationships.

Thingbook a new entangled of people, animals, things and data, an emergent morphology and topography of images, nodes and flows.

That article goes further in the attempt to establish the Thingbook also as a concept and a practical instantiation of the new ontological dimension. Taking this as a starting point we can expand on the concept by testing it in relation to the relevance that images have gained in the media landscape and algorithmic processes described earlier and in relation to the rebalancing of idiom between representation and performativity.

In the Thingbook the traditional anthropocentric and then socio-centric vision at the very basis of western dualistic ontological understanding which the representational approach embodies cohabits with the performative approach that in James's words looks at the reality as is still in the making (James, [1907] 1979)

The Thingbook becomes then the open platform whereby the image as an equivalent role as that of the word in a visual language yet to be defined and also is at the centre of subatomic processes whereby data redefines the role and nature of images itself in relation to what they used to represent. The image in the context of the digital media dissolves into dataset, to be then recomposed as a performative object through its new nature of data. As Nardi pointed out for objects 'Objects can be transformed in the course of an activity; they are not immutable structures' (Nardi, 1996: 74), it could be said of images.

The syncretic space that frames it could have the complex richness of a new language and shifts the value of an image from its representational state to the performative one.

Quoting Pickering and going through the examples made earlier, the oscillation of idioms, the performative and the representational, as we called it at the beginning, becomes essential. Pickering also pointed out the performative approach includes the

representational and therefore the condition of the Thingbook results somehow paradoxical. This reminds of another cat story, the Schrödinger's Cat.

Schrödinger imagined for this experiment to put in a steel box, a Geiger counter, some poison in a vial, a hammer, and a radioactive substance. When the radioactive substance decays the Geiger counter triggers the hammer that breaks the vial and poisons the cat. In that theoretical physics experiment the cat is 'living and dead [...] in equal parts'.

The condition of the image in the new digital landscape that of IoT, Social Media, Big Data and ANN is in this paradoxical syncretic state. A combination of both representational and performative. Exposing this new condition could somehow help to establish a new relationship and roles with images. This understanding brings the discussion back to our theory object, the Thingbook.

Given the above is therefore the Thingbook the space to play the state of what a quantum physicist might call superposition? In the Thingbook the image might oscillate between the two idioms, the representational and the performative, rebalancing its nature and condition, object or data, image or language.

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